WHAT IS CLAIMED IS:

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1		1.	An isolated binding agent that competes with a monoclonal
2	antibody MAI	292-2	-3 for specific binding to human cytochrome P450 allelic variant
3	2C9*2 wthou	t specif	ically binding to human cytochrome 2C9*1 and 2C9*3, and that
4	specifically in	hibits 2	C-catalyzed metabolism of phenanthrene by at least 50%.
1	. **	2.	The binding agent of claim 1 that lacks specific binding to each o
2	human cytoch	romes	P450 1A1, 1A2, 2A6, 2B6, 2C8, 2C18, 2C19, 2D6, 2E1, 3A4, and
3 · *	3A5.		
1		3.	The binding agent of claim 1 that specifically inhibits the enzyme
2	activity of hu	man cy	tochrome P450 allelic variant 2C9*2 by at least 90%.
1	(80	4.	The binding agent of claim 1 that is MAb 292-2-3 or a binding
2	fragment there	eof.	
1	$\mathcal{D}_{\underline{\phi}}$	5.	The binding agent of claim 1 that is a monoclonal antibody.
1	*****	6.	The monoclonal antibody of claim 5 that is a Fab fragment.
1	*	7.	The monoclonal antibody of claim 5 that is a mouse antibody.
1	*	8.	A cell line producing the monoclonal antibody of claim 5.
1 -		9.	The cell line of claim 8 that is a eucaryotic cell line.
1	* *	10.	The cell line of claim 9 that is a procaryotic cell line.
1		11.	The monoclonal antibody of claim 5 comprising a light chain
2	variable doma	ain havi	ing at least 80% sequence identity with the light chain variable
3	domain of a n	nonocle	onal antibody MAb 292-2-3 and a heavy chain variable domain
4	having at least 80% sequence identity with the heavy chain variable domain of the		
5	monoclonal a	ntibody	MAb 292-2-3.
1		12.	The monoclonal antibody of claim 5, wherein the light chain

variable domain comprises three CDR regions from the light chain of a monoclonal

antibody MAb 292-2-3, and the heavy chain variable domain comprises three CDR 3 4 regions from the heavy chain of the monoclonal antibody MAb 292-2-3. 13. 1 An isolated binding agent that competes with a monoclonal 2 antibody MAb 763-15-5 for specific binding to the human cytochrome p450 2C9 allelic 3 variants 2C9*1, 2C9*2, and 2C9*3, and that specifically inhibits 2C-catalyzed 4 metabolism of phenanthrene by at least 50%. 14. The binding agent of claim 13 that lacks specific binding to each of 1 2 human cytochromes P450 1A1, 1A2, 2A6, 2B6, 2C9, 2C18, 2C19, 2D6, 2E1, 3A4, and 3 3A5. 15. The binding agent of claim 13 that specifically inhibits the enzyme 1 2 activity of human cytochrome P450 allelic variant 2C9*2 by at least 90%. The binding agent of claim 13 that is MAb 292-2-3 or a binding 1 16. 2 fragment thereof. The binding agent of claim 13 that is a monoclonal antibody. 17. 1 1 18. The monoclonal antibody of claim 17 that is a Fab fragment. 19. The monoclonal antibody of claim 17 that is a mouse antibody. 1 1 20. A cell line producing the monoclonal antibody of claim 17. 2 21. The cell line of claim 20 that is a eucaryotic cell line. 1 22. The cell line of claim 21 that is a procaryotic cell line. 23. The monoclonal antibody of claim 17 comprising a light chain 2 variable domain having at least 80% sequence identity with the light chain variable domain of a monoclonal antibody MAb 763-15-5 and a heavy chain variable domain 3 4 having at least 80% sequence identity with the heavy chain variable domain of the 5 monoclonal antibody MAb 763-15-5. 24. The monoclonal antibody of claim 17, wherein the light chain . 1 2 variable domain comprises three CDR regions from the light chain of a monoclonal

antibody MAb 763-15-5, and the heavy chain variable domain comprises three CDR 3 4 regions from the heavy chain of the monoclonal antibody MAb 763-15-5. 25. 1 The binding agent of claim 13 that specifically inhibits the enzyme 2. activity of human cytochrome P450 allelic variants 2C9*1 and 2C9*3 by at least 70%. 1 26. The binding agent of claim 13 that specifically inhibits the enzyme 2 activity of human cytochrome P450 2C18 by 30%. 1 27. An isolated binding agent that competes with a monoclonal 2 antibody MAb 763-15-20 for specific binding to the human cytochrome P450 2C9 allelic 3 variants 2C9*1, 2C9*2, and 2C9*3. An isolated binding agent that competes with a monoclonal 28. 1 2 antibody selected from the group consisting of MAb 5-1-5 and MAb 281-1-1 for specific 3 binding to human cytochrome P450 2C8, and that specifically inhibits 2C-catalyzed 4 metabolism of phenanthrene by at least 50%. 29. The binding agent of claim 28 that lacks specific binding to each of 1 human cytochromes P450 1A1, 1A2, 2A6, 2B6, 2C9, 2C18, 2C19, 2D6, 2E1, 3A4, and 2 3 3A5. 30. The binding agent of claim 28 that specifically inhibits the enzyme 1 2 activity of human cytochrome p450 2C8 by at least 90%. 1 31. The binding agent of claim 28 that is MAb 5-1-5 or a binding 2 fragment thereof. 1 32. The binding agent of claim 28 that is MAb 281-1-1 or a binding 2 fragment thereof. The binding agent of claim 28 that is a monoclonal antibody. 1 33. The monoclonal antibody of claim 33 that is a Fab fragment. 34. 1 The monoclonal antibody of claim 33 that is a mouse antibody. 1 35.

A cell line producing the monoclonal antibody of claim 33.

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1	37.	The cell line of claim 36 that is a eucaryotic cell line.
1	38.	The cell line of claim 37 that is a procaryotic cell line.
1	39.	The monoclonal antibody of claim 33 comprising a light chain
2	variable domain hav	ing at least 80% sequence identity with the light chain variable
3.	domain of a monocle	onal antibody selected from the group consisting of MAb 5-1-5 and
4	MAb 281-1-1, and a	heavy chain variable domain having at least 80% sequence identity
5	with the heavy chair	variable domain of a monoclonal antibody selected from the group.
1	40.	The monoclonal antibody of claim 33, wherein the light chain
2	variable domain con	aprises three CDR regions from the light chain of a monoclonal
3	antibody selected fro	om the group, and the heavy chain variable domain comprises three
4	CDR regions from the	ne heavy chain of a monoclonal antibody selected from the group.
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1	41.	An isolated binding agent that competes with a monoclonal
2	_	2-5 for specific binding to human cytochrome P450 2C9 and 2C18,
3	and that specifically	inhibits 2C-catalyzed metabolism of phenanthrene by at least 50%.
1	42.	The binding agent of claim 41 that specifically inhibits the enzyme
2	activity of human cy	tochrome p450 2C9 by at least 80%.
1	43.	The binding agent of claim 41 that specifically inhibits the enzyme
2	activity of human cy	vtochrome P450 2C18 by at least 80%.
1	44.	The binding agent of claim 41 that is MAb 592-2-5 or a binding
2	fragment thereof.	
1	45.	The binding agent of claim 41 that is a monoclonal antibody.
1	46.	The monoclonal antibody of claim 45 that is a Fab fragment.
1	47.	The monoclonal antibody of claim 45 that is a mouse antibody.
1	48.	A cell line producing the monoclonal antibody of claim 45.
1	49.	The cell line of claim 48 that is a eucaryotic cell line.

1	50.	The cell line of claim 48 that is a procaryotic cell line.		
1	51.	The monoclonal antibody of claim 45 comprising a light chain		
2	variable domain hav	ing at least 80% sequence identity with the light chain variable		
3	domain of a monocl	onal antibody MAb 592-2-5 and a heavy chain variable domain		
4	having at least 80%	sequence identity with the heavy chain variable domain of the		
5	monoclonal antibod	y MAb 592-2-5.		
1	52.	The monoclonal antibody of claim 45, wherein the light chain		
2	variable domain con	aprises three CDR regions from the light chain of a monoclonal		
3	antibody MAb 592-	2-5 and the heavy chain variable domain comprises three CDR		
4	regions from the hea	avy chain of the monoclonal antibody MAb 592-2-5.		
1	53.	An isolated binding agent that competes with a monoclonal		
2	antibody MAb 5-7-5	5 for specific binding to a human cytochrome p450 2C family member		
3	selected from the group consisting of 2C9, 2C18, and 2C19, and that specifically inhibits			
4	2C-catalyzed metab	olism of phenanthrene by at least 50%.		
1	* 51	The hinding equat of claim 52 that leaks exceife hinding to each of		
1	54.	The binding agent of claim 53 that lacks specific binding to each of		
2	numan cytochromes	P450 1A1, 1A2, 2A6, 2B6, 2C8, 2D6, 2E1, 3A4, and 3A5.		
1	55.	The binding agent of claim 53 that specifically inhibits the enzyme		
2	activity of human cy	tochrome p450 2C9 by at least 90%.		
1	56.	The binding agent of claim 53 that specifically inhibits the enzyme		
2	activity of human c	ytochrome p450 2C18 by at least 90%.		
1	57.	The binding agent of claim 53 that specifically inhibits the enzyme		
2	activity of human c	ytochrome p450 2C19 by at least 90%.		
1	58.	The binding agent of claim 53 that is a monoclonal antibody.		
1	59.	The monoclonal antibody of claim 58 that is a Fab fragment.		
1	60.	The monoclonal antibody of claim 59 that is a mouse antibody.		
1 .	61.	The binding agent of claim 53 that is MAb 5-7-5 or a binding		
2	fragment thereof.			

1	62. A cell line producing the monoclonal antibody of claim 58.			
1	63. The cell line of claim 62 that is a eucaryotic cell line.			
1	64. The cell line of claim 62 that is a procaryotic cell line.			
1	65. The monoclonal antibody of claim 58 comprising a light chain			
2	variable domain having at least 80% sequence identity with the light chain variable			
3	domain of a monoclonal antibody MAb 5-7-5 and a heavy chain variable domain having			
4	at least 80% sequence identity with the heavy chain variable domain of the monoclonal			
5	antibody MAb 5-7-5.			
1	66. The monoclonal antibody of claim 58, wherein the light chain			
2	variable domain comprises three CDR regions from the light chain of a monoclonal			
3	antibody MAb 5-7-5 and the heavy chain variable domain comprises three CDR regions			
4	from the heavy chain of the monoclonal antibody MAb 5-7-5.			
1	67. A method of determining whether cytochrome P450 2C9*2			
2	metabolizes a compound, comprising:			
3	contacting the compound with cytochrome P450 2C9*2 in the presence of			
4	varying amounts of the binding agent of claim 1; and			
5	assaying metabolism of the compound as a function of amount of binding			
6.	agent, a decrease of metabolism with amount of binding agent indicating that cytochrome			
7	P450 2C9*2 metabolizes the compound.			
1	68. The method of claim 67, wherein the compound is contacted with			
2	cytochrome P450 2C9*2 in a sample containing a collection of cytochrome P450			
3	enzymes including 2C9*2.			
1	69. The method of claim 68, wherein the sample is a tissue sample.			
1	70. The method of claim 69, wherein the collection of enzymes are			
2	obtained from a cell culture expressing the enzymes.			
1.	71. The method of claim 70, wherein the compound is a drug, steroid			

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or carcinogen.

1	72. A method of detecting cytochrome P450 2C9*2, comprising:			
2	contacting a sample suspected of containing cytochrome P450 2C9*2 with			
3	a binding agent of claim 1; and			
4	determining whether the agent specifically binds to the sample, specific			
5	binding indicating the presence of cytochrome P450 2C9*2 in the sample.			
1	73. A method of measuring P450 2C9*2 levels in an individual relative			
Ţ	75. A method of measuring F450 2C9 2 levels in an individual relative			
2	to P450 2C9*2 levels in a control population, the method comprising:			
3	contacting a sample suspected of containing cytochrome P450 2C9*2 from			
4	the individual with a binding agent of claim 1, and			
5	determining the P450 2C9*2 levels in the individual relative to P450			
6	2C9*2 a mean level in a control population.			